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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,460	07/21/2000	Hirofumi Kamosawa	048369/0118	4653

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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/621,460

Applicant(s)

KAMOSAWA ET AL.

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 January 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The objections to the specification, to the claims and the rejections under 35 U.S.C. 112 as stated in the Office action dated, October 16, 2002 are hereby withdrawn.
2. The drawing corrections as submitted on January 21, 2003 are approved

***Response to Amendment***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

4. Applicant's arguments with respect to claims 1-6 and 12-13 have been considered but are moot. The original rejections (for claims 1-6) as stated in the Office action dated October 16, 2002 are still valid. Following is the response by the examiner to the applicant's arguments.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 2, 5 and 12 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1,2 and 5 recite the new limitation 'one pair of oppositely disposed apertures' and claim 12 recites the new limitation 'tapered so as to be smaller than a non-end portion'.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation 'an end portion of at least one of the array substrate and opposing substrate being polished and tapered so as to be smaller than a non-end portion' is not clear. Non-end portion is not obvious from the figures. Also as shown in Figs. 4 and 5, the end portion (left hand side) and the non-end portion (right hand side), where the edge seal is shown, both have equal widths.

"*For 12*"

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-2, 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazlas et al (kazlas) (U.S.Patent No. 5,919,606) in view of Hirakata et al. (Hirakata) (U.S.Ptaent No. 6,219,127).

a. As to claims 1 and 5: Kazlas discloses a liquid-crystal display element (Fig. 9) wherein an array substrate on which a plurality of liquid-crystal injection areas (940) are arranged and each liquid crystal injection area is surrounded by a seal (950) having an aperture and an overall liquid-crystal injection areas being surrounded by an outer peripheral seal (920) having an aperture (930), and an opposing substrate are adhered together, and the aperture of the outer peripheral seal being sealed by a hole sealant (photo defined adhesive sealer), after which cutting plurality of liquid-crystal injection areas along lines 930A and 930B, scribe lines) as formed between the opposite aperture holes so as to separate individual liquid-crystal injection areas. Although, polishing of the substrates is well known and quite necessary for proper operation of the liquid crystal display, Kazlas does not explicitly disclose this operation. Hirakata on the other hand, in disclosing a similar liquid crystal display device, discloses (Col. 3,

lines 60-64) polishing the end surfaces of the substrates (101 and 102).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the end polishing operation as disclosed by Hirakata to the display configuration of Kazlas to protect against contamination and simplify handling.

As to claim 2: Kazlas discloses that a plurality of apertures at the outer peripheral seal are provided (Fig. 9) along the outer peripheral seal (620) and at crossing points each being formed between the outer peripheral seal and a line along (scribe lines) which the individual liquid-crystal injection areas are cut apart.

As to claim 4: Kazlas discloses that the outer peripheral seal and the edge sealer comprise a polymeric resin and UV curing (Col. 1, lines 60-64).

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazlas in view of Wenz et al. (Wenz) (U.S. Patent No. 5,268,782). Kazlas discloses separating an individual liquid-crystal injection area, liquid crystal is injected into the liquid-crystal injection area (col. 11, lines 17-44) and sealing of the individual cells. Although incorporation of polarizers in liquid crystal display is also well known, Kazlas does not explicitly disclose the application of polarizers. Wenz on the other hand, in disclosing a similar multi cell liquid crystal display device, discloses polarizers (24, 26). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to adapt the polarizers disclosed by Wenz to the display configuration of Kazlas to achieve high contrast and high brightness displays.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazlas in view of Ishihara et al. (Ishihara) (U.S. Patent No. 5,537,235). Kazlas does not disclose a tapered configuration. Ishihara on the other hand, discloses the end portions of substrate (31b) and the opposing substrate (31a) showing a tapered configuration (Figs. 4A and 4B, Col. 9, lines 20-22). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the tapered configuration as disclosed by Ishihara to the display configuration of Kazlas to achieve uniform display.

13. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazlas in view of Hirakata (previously cited).

b. Kazlas does not disclose that either one of the substrates is tapered. However, Hirakata discloses a tapered configuration for the top substrates (left hand side of Fig. 3c) and (col. 3, lines 40-60). End sealing of the display, as disclosed by Hirakata is a necessary step because without such a seal the liquid crystal leaks out thus making the display unusable. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the configuration disclosed by Hirakata so that a space other than an effective display region is made small and a substrate size is reduced (abstract).

***Response to Arguments***

14. Applicant's arguments with respect to claims 1-6 and 12-13 have been considered but are moot in view of the new ground(s) of rejection. Following is the response by the Examiner to the applicant's arguments:

(a) Applicant's argument No. 1 (Page 10, line 12-15 and elsewhere): Kazlas does not disclose the hole sealants for the apertures as pointed out above.

Examiner's response to argument No. 1: Applicant admits that Kazlas shows the apertures in Fig. 9. However, the argument is that Kazlas does not disclose the hole sealant for these apertures. The Examiner disagrees with this argument. In (col. 11, lines 18-20 and lines 28-29), Kazlas discloses a cell filled with liquid crystal material and is sealed with an edge seal. Hirakata on the other hand discloses a hole sealant (Figs. 4A-4D).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone numbers



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for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

*fRA*

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March 26, 2003

TOANTON  
MINER  
PO...